SANTA CRUZ BIOTECHNOLOGY, INC.

AATC (V-14): sc-46283

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Aspartate aminotransferase (AAT) is a ubiquitous pyridoxal phosphate-dependent enzyme, which exists in both mitochondrial (AATM) and cytosolic (AATC) forms. The enzyme plays an important role in amino acid metabolism and in the urea and tricarboxylic acid cycles by catalyzing the conversion of L-aspartate and 2-oxoglutarate to oxaloacetate and L-glutamate. The two isoenzymes are homodimeric, but differ in expression patterns. Approximately 80% of the enzyme activity in liver is of mitochondrial origin, whereas in serum the enzyme activity is largely cytosolic. Also, AATC and AATM share nearly identical three-dimensional structures, but differ in their folding rates and in their affinity for binding to molecular chaperones, including GroEL.

REFERENCES

1. Doonan, S., et al. 1984. Structural and genetic relationships between cytosolic and mitochondrial isoenzymes. Int. J. Biochem. 16: 1193-1199.
2. Pol, S., et al. 1988. Nucleotide sequence and tissue distribution of the human mitochondrial aspartate aminotransferase mRNA. Biochem. Biophys. Res. Commun. 157: 1309-1315.
3. Panteghini, M., et al. 1990. Aspartate aminotransferase isoenzymes. Clin. Biochem. 23: 311-319.
4. Donate, F., et al. 1998. Opposite behavior of two isozymes when refolding in the presence of non-ionic detergents. Protein Sci. 7: 1811-1820.
5. Mattingly, J.R. Jr., et al. 1998. Conformation of aspartate aminotransferase isozymes folding under different conditions probed by limited proteolysis. J. Biol. Chem. 273: 23191-23202.
6. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 138180. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. SWISS-PROT/TrEMBL (P17174). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: GOT1 (human) mapping to 10q24.1-q25.1; Got1 (mouse) mapping to 19 C3.

SOURCE

AATC (V-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of AATC of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46283 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

AATC (V-14) is recommended for detection of aspartate aminotransferase cytosolic form of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AATC (V-14) is also recommended for detection of aspartate aminotransferase cytosolic form in additional species, including equine, canine and porcine.

Suitable for use as control antibody for AATC siRNA (h): sc-45602 and AATC siRNA (m): sc-45603.

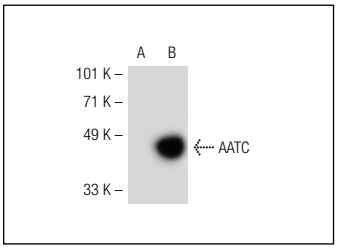
Molecular Weight of AATC: 46 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, c4 cell lysate or TT cell lysate.

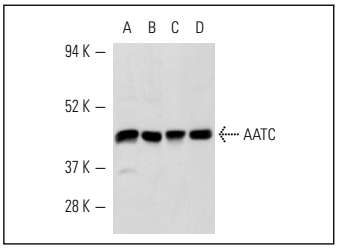
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



AATC (V-14): sc-46283. Western blot analysis of AATC expression in non-transfected: sc-117752 (**A**) and mouse AATC transfected: sc-118148 (**B**) 293T whole cell lysates.



AATC (V-14): sc-46283. Western blot analysis of AATC expression in Hep G2 (**A**), c4 (**B**) and TT (**C**) whole cell lysates and mouse liver tissue extract (**D**).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

MONOS Satisfaction Guaranteed

Try **AATC (H-8): sc-515641**, our highly recommended monoclonal alternative to AATC (V-14).